



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,173	06/22/2001	Hajime Kando	36856.510	7813

7590 11/26/2002

Keating & Bennett LLP
10400 Eaton Place, Suite 312
Fairfax, VA 22030

EXAMINER

DOUGHERTY, THOMAS M

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,173

Applicant(s)

KANDO, HAJIME

Examiner

Thomas M. Dougherty

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 6-15 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Election/Restrictions***

Claims 6-15 are withdrawn from further consideration pursuant to 37 CFR

1.142(b) as being drawn to a nonelected groups, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Claim Rejections - 35 USC § 102

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

a. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Ichikawa (US 6,462,633). Ichikawa shows (figs. 3, 5 and 11A, B) a surface acoustic wave device, comprising: a piezoelectric substrate (understood); and at least two basic sections disposed on said piezoelectric substrate, each of the at least two basic sections including an asymmetrical double electrode defining a half wavelength section (note in figs. 11A and B which are shown as a way of explanation of internal reflection, 711 and 712 as well as the distance between them define a length of $3\Lambda/8$ and the distance between G and e1 of 711 is $\Lambda/16$, such a space also exists beyond e4, therefore $\Lambda/16 + \Lambda/16 + 3\Lambda/8 = \Lambda/2$) and having first and second strips with different widths from each other (e.g. fig. 5); wherein an absolute value of a vector angle of a reflection center obtained from a resultant vector generated by synthesizing reflection vectors at edges of the first

Art Unit: 2834

and second strips, is within a range of angles of approximately 45 ± 10^0 or approximately 135 ± 10^0 , when a center of a respective one of said at least two basic sections is a reference position for the range of angles. Note his discussion at col. 8, especially lines 45-52 where he notes that "it may be possible to adjust vectors E11, E22, E33 and E44, precisely equivalent to the Applicants' vectors X1-X4 as shown in their fig. 16, so that these are situated in a first quadrant between 90^0 and 0^0 (which includes the claimed range of 45 ± 10^0) and on the A1 side and in a fourth quadrant side between 0^0 and 270^0 ." The reflection amounts of surface acoustic waves at edge positions of said strips are substantially equal to one another (note in fig. 11C that Ichikawa shows equal reflection amounts). Said asymmetrical double electrode is an interdigital transducer. Said asymmetrical double electrode is a reflector (see E1-E4 in fig. 11B).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa (US 6,462,633) in view of Graebner et al. (US 6,049,155). Given the invention of

Art Unit: 2834

Ichikawa as noted above he does not show a piezoelectric substrate made of quartz crystal material. Graebner notes (col. 3, ll. 5-6) the use of quartz in a surface acoustic wave device for its piezoelectric substrate. He further notes the interchangeability of quartz with lithium borate, which is the material used by Ichikawa. Graebner doesn't disclose designing his device for the purpose of choosing its vector angle of a reflection center. It would have been obvious to one having ordinary skill in the art to employ the quartz of Graebner in the invention of Ichikawa at the time of his invention since these are interchangeable materials in this regard. Additionally, quartz is a readily available material with well-known characteristics and thus its operability can be easily predicted for such use. Finally it would have been obvious to one having ordinary skill in the art at the time of the Ichikawa invention to use quartz in the device for the piezoelectric substrate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wright teaches ('940 and '146) design of the interdigital transducer fingers so that the resultant vector value can be set, though in his case it is for complete cancellation. Gau ('345) notes importance of resultant vector magnitude and direction in his patent. Mitobe ('150) teaches setting the dimensions and position of first and second fingers in an asymmetrical double electrode arrangement so that a reflection result can be selected. Martin ('600), Yamada et al. ('260), Sato et al. ('909)

Art Unit: 2834

and Hickernell ('177) all teach asymmetric double electrodes in their surface acoustic wave devices. Hirota's ('88) invention is drawn to reflection considerations.

Direct inquiry concerning this action to Examiner Dougherty at (703) 308-1628.

tmd
tmd

November 22, 2002

Thomas M. Dougherty
THOMAS M. DOUGHERTY
PRIMARY EXAMINER
GROUP 2160
2600